

# DART SERVICE INSTRUCTION

TO AMEND OWNER'S & OVERHAUL PROCEDURE MANUAL  
O&OPM-C2 REV. H OR LATER APPROVED REVISIONS  
O&OPM-C3 REV. N OR LATER APPROVED REVISIONS  
O&OPM-C10 REV. K OR LATER APPROVED REVISIONS  
O&OPM-C15 REV. G OR LATER APPROVED REVISIONS  
O&OPM-C45 REV. J OR LATER APPROVED REVISIONS  
O&OPM-C60 REV. H OR LATER APPROVED REVISIONS  
O&OPM-C250 REV. H OR LATER APPROVED REVISIONS

## 1.0 PURPOSE

The purpose of this DART Service Instruction (DSI) is to provide recommendations to customers who own a DART Remote Cargo Hook to decrease the chances of an inadvertent release. These recommendations are based on AC43.13-1B Chg. 1 (Ref. 1) and are related to the aircraft's electrical installation when connected to a DART Remote Cargo Hook. Any changes made to the aircraft's electrical installation may be subject to regulatory approval.

**WARNING:** A helicopter cargo hook system must be properly installed, maintained, and operated in accordance with the applicable technical documentation to prevent accidental or inadvertent release of the cargo hook load, which could result in injury, death, or damage to property.

## 2.0 ELECTRICAL INSTALLATION

For reference, the current electrical installation of a DART Remote Cargo Hook is shown in Figure 2-1.

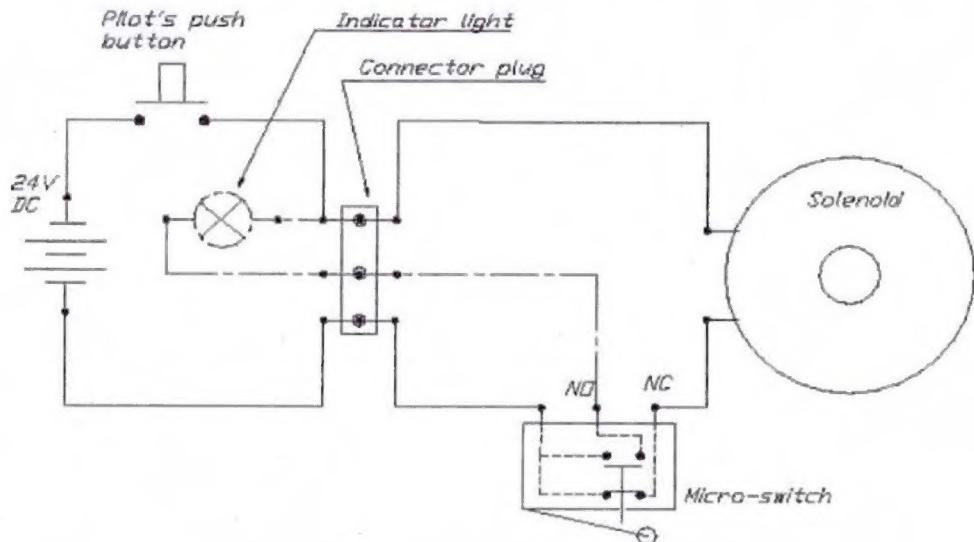
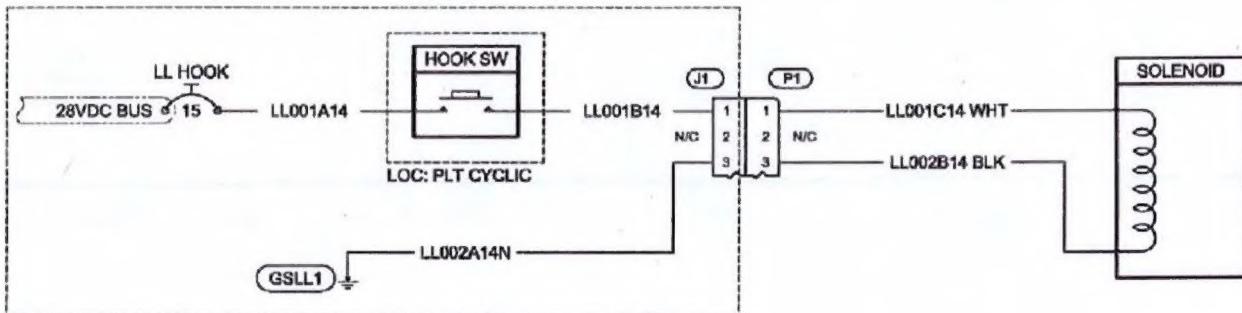


FIGURE 2-1: CURRENT ELECTRICAL INSTALLATION

The micro-switch is no longer installed in new DART Remote Cargo Hooks. Figure 2-2 provides a revised electrical installation which includes an optional circuit breaker and removes the micro-switch installation.

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**FIGURE 2-2: REVISED ELECTRICAL INSTALLATION**

## **2.1 CIRCUIT BREAKER**

The circuit breaker should be able to supply 15A intermittently to activate the solenoid. Dart recommends the following circuit breakers: MS14105-15, MS22073-15, MS24510-A-15, MS25244-15, and MS26574-15.

## **2.2 WIRING**

Per AC43.13-1B Chg. 1 (Ref. 1) Table 11-3 a 15A circuit breaker requires, at minimum, a 16 AWG wire. DART recommends the following wires as replacements: M22759/16-16-X and M22759/34-16-X.

The aircraft cargo hook electrical system should be regularly inspected for shorts, damage, or wear and be repaired/replaced as needed according to the schedule provided in the applicable O&OPM Manual. Shorts or faults in the electrical wiring, switches, relays, etc may cause aircraft power to be routed to the cargo hook without pilot contact on the electrical release switch, which could cause an inadvertent release of the external load.

## **2.3 PILOT PUSH BUTTON**

Based on the stated maximum current drawing found in the aforementioned O&OPMs the hook switch should be capable of switching approximately 15A. Dart recommends the MS24523 switch. alternatively, a relay can be installed to switch the load to the cargo hook and a lower rated switch(es) may be used. Ensure the switch(es) and relays are appropriately rated for the required current draw.

Many aircrafts do not utilize guarded switches and controls for the cargo hook release and some installations utilize switches that only require slight pressure to actuate. This may lead to accidental cargo hook release during external load operations. Dart recommends the installation of a switch guard or dual switch installation to prevent inadvertent release of the cargo hook load.

## **3.0 WEIGHT AND BALANCE**

It is the installer's or operator's responsibility to determine any changes to the weight and balance based on the aircraft's electrical installation.

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